

IN THE CLAIMS

Please amend the claims as follows:

Claim 1 (Currently Amended): A fuel cell apparatus comprising:

a fuel cell including an electrolyte membrane, a fuel electrode provided on one side of the electrolyte membrane and to which a fuel-containing material is supplied, and an air electrode provided on the other side of the electrolyte membrane and to which air is supplied;

a fuel cell cooling system for cooling the fuel cell by supplying a fuel cell cooling water to the fuel cell;

a hot water storage unit for supplying water for recovering heat generated upon operation of the fuel cell through heat exchange; and

a heat exchange unit including a laminated structure, a water entrance provided at the laminated structure and through which the water from the hot water storage unit flows into the laminated structure, and a water exit provided at the laminated structure and through which the water from the hot water storage unit is discharged out of the laminated structure after the water passes through the laminated structure; wherein the laminated structure of the heat exchange unit is integrally formed into lamination by a heat exchanger for the fuel cell cooling water for recovering heat in the fuel cell cooling water of the fuel cell cooling system and at least any one of a first heat exchanger for eliminating moisture contained in the fuel-containing material to be supplied to the fuel cell for power generation through the heat exchange, ~~a second heat exchanger for eliminating moisture contained in a fuel off gas discharged from the fuel cell after the power generation through the heat exchange, and a third heat exchanger for eliminating moisture contained in an air off gas discharged from the fuel cell after the power generation through the heat exchange.~~

Claim 2 (Original): A fuel cell apparatus according to claim 1, wherein the heat exchanger for the fuel cell cooling water is provided close to the water exit of the laminated structure relative to the second heat exchanger.

Claim 3 (Currently Amended): A fuel cell apparatus according to claim 1, ~~wherein~~ the further comprising a second heat exchanger is provided close to the water entrance of the laminated structure relative to the heat exchanger for the fuel cell cooling water.

Claim 4 (Original): A fuel cell apparatus according to claim 3, wherein the first exchanger is provided close to the water entrance of the laminated structure relative to the heat exchanger for the fuel cell cooling water.

Claim 5 (Original): A fuel cell apparatus according to claim 4, further comprising:
a reformer for generating the fuel-containing material, and wherein the laminated structure of the heat exchange unit includes a heat exchanger for a combustion exhaust gas formed into lamination for recovering heat in the combustion exhaust gas discharged from the reformer.

Claim 6 (Original): A fuel cell apparatus according to claim 5, wherein the third heat exchanger is provided close to the water entrance of the laminated structure relative to the heat exchanger for the fuel cell cooling water.

Claim 7 (Original): A fuel cell apparatus according to claim 6, further comprising a radiator for cooling the water before the water enters into the heat exchange unit, and wherein

the fuel cell is provided on upper side of the laminated structure, which is arranged next to the radiator.

Claim 8 (Original): A fuel cell apparatus according to claim 1, wherein the first heat exchanger includes a first entrance formed at a lower portion of the first heat exchanger into which the fuel-containing material to be supplied to the fuel cell for the power generation enters, a first heat exchange passage through which the fuel-containing material flows upward, and a first exit formed at an upper portion of the first heat exchanger from which the fuel-containing material is discharged.

Claim 9 (Currently Amended): A fuel cell apparatus according to claim 8, wherein the further comprising a second heat exchanger includes including a second entrance formed at an upper portion of the second heat exchanger into which the fuel off-gas being discharged after the power generation enters, a second heat exchange passage through which the fuel off-gas flows downward, and a second exit formed at a lower portion of the second heat exchanger from which the fuel off-gas is discharged.

Claim 10 (Currently Amended): A fuel cell apparatus according to claim 9, wherein the further comprising a third heat exchanger includes including a third entrance formed at an upper portion of the third heat exchanger into which the air off-gas being discharged after the power generation enters, a third heat exchange passage through which the air off-gas flows downward, and a third exit formed at a lower portion of the third heat exchanger from which the air off-gas is discharged.

Claim 11 (Original): A fuel cell apparatus according to claim 10, wherein the heat exchanger for the fuel cell cooling water includes a fourth entrance formed at an upper portion of the heat exchanger for the fuel cell cooling water into which the fuel cell cooling water enters, a fourth heat exchange passage through which the fuel cell cooling water flows downward, and a fourth exit formed at a lower portion of the heat exchanger for the fuel cell cooling water from which the fuel cell cooling water is discharged.

Claim 12 (Original): A fuel cell apparatus according to claim 11, wherein the heat exchanger for the combustion exhaust gas includes a fifth entrance formed at an upper portion of the heat exchanger for the combustion exhaust gas, a fifth heat exchange passage through which the combustion exhaust gas flows downward, and a fifth exit formed at a lower portion of the heat exchanger for the combustion exhaust gas from which the combustion exhaust gas is discharged.

Claim 13 (Original): A fuel cell apparatus according to claim 12, wherein the first heat exchanger, the second heat exchanger, the third heat exchanger, the heat exchanger for the fuel cell cooling water, and the heat exchanger for the combustion exhaust gas are defined by plates each having a rectangular thin sheet shape.

Claim 14 (Original): A fuel cell apparatus according to claim 13, wherein each plates is formed by a plurality of convex portions and a plurality of concave portions being alternately arranged at a center portion of one side and the other side of each plate.

Claim 15 (New): The fuel cell apparatus according to claim 1, wherein the laminated structure of the heat exchange unit includes a second heat exchanger for eliminating moisture

contained in a fuel off-gas discharged from the fuel cell after the power generation through the heat exchange.

Claim 16 (New): The fuel cell apparatus according to claim 1, wherein the laminated structure of the heat exchange unit includes a third heat exchanger for eliminating moisture contained in an air off-gas discharged from the fuel cell after the power generation through the heat exchange.

Claim 17 (New): The fuel cell apparatus according to claim 1, wherein the laminated structure of the heat exchange unit includes a first heat exchanger for eliminating moisture contained in the fuel-containing material to be supplied to the fuel cell for power generation through the heat exchange, a second heat exchanger for eliminating moisture contained in a fuel off-gas discharged from the fuel cell after the power generation through the heat exchange, and a third heat exchanger for eliminating moisture contained in an air off-gas discharged from the fuel cell after the power generation through heat exchange.

BASIS FOR THE AMENDMENT

Claims 1-17 are active in the present application. Claims 1-14 are original claims.

Claims 15-17 are new claims. Support for the new claims is found in original independent

Claim 1.

No new matter is added.